

REMARKS

Claim 20 has been amended to limit the composite film of the invention to one comprising amorphous hard carbon composed mainly of carbon and hydrogen, and containing a silicon carbide and a silicon oxide, where the atomic % of the silicon bonded with carbon is greater than that of the silicon bonded with oxygen. Claim 21 has been cancelled and claim 23 has been amended to change the terminology "the at least one metal" to --silicon-- for consistency with the amendment to claim 20.

Reconsideration and removal of the 35 U.S.C. §112, first paragraph, rejection of the claims made in the Action of May 19, 2003, are respectfully requested in view of the above-noted amendments to the claims.

Claims 20-23 are rejected in the Action under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The position of the Office is that the specification does not disclose the limitation now recited in claim 20 of the atomic % of the at least one metal of the carbide being greater than that of the at least one metal of the oxide. The Action

appears to suggest that the limitation must be explicitly disclosed in the specification (e.g., the next-to-last sentence of paragraph (2) on page 2 of the Action).

If the Office is suggesting that a limitation such as that recited in claim 20 must be explicitly disclosed in the specification, it is not correct. As recently noted by the United States Court of Appeals for the Federal Circuit, "the failure of the specification to specifically mention a limitation that later appears in the claims is not a fatal one when one skilled in the art would recognize upon reading the specification that the new language reflects what the specification shows has been invented."

All Dental Prodx LLC v. Advantage Dental Products Inc., 64 USPQ2d 1945, 1948 (Fed. Cir. 2002). The issue, therefore, as it applies to the amended claims, is whether a person of ordinary skill in the art would recognize from the specification disclosure of the present application that in the composite film of the invention, the atomic % of silicon of the carbide is greater than that of silicon of the oxide.

The applicant respectfully submits that a person of ordinary skill in the art would recognize from the specification disclosure of the present application that in the composite film of the invention comprising amorphous hard carbon composed mainly of carbon and hydrogen, and containing a silicon carbide and a silicon oxide, the atomic % of the silicon bonded with carbon is greater than that of the silicon bonded with oxygen.

Specifically, on page 7, line 34, to page 8, line 4, of the specification, it is disclosed that in the amorphous hard carbon film of the invention containing silicon to which various amounts of oxygen were added, "[t]he silicon content is 4 atomic % or less and mainly bonded with carbon to form the Si-C bond" and "[a] part of silicon is bonded with oxygen and is in the form of SiO_x ". This description, when considered in light of the following descriptions in the application regarding amorphous hard carbon films of the invention containing silicon, convey to the person of ordinary skill in the art that in the amorphous hard carbon films, the atomic % of the silicon bonded with the metal is greater than the

atomic % of the silicon bonded with the oxygen. These descriptions are:

"Regarding the bonding state of elementary silicon in the film, it is bonded with carbon and forms stable carbides." (Page 7, lines 9-10). (Emphasis added).

"The trace amount of oxygen is bonded with the metal [silicon] element, which is not yet fixed by carbon in the form of stable carbide. The resultant oxide is in a stable bonding state." (Page 7, lines 21-23). (Emphasis added).

"The amorphous hard carbon film according to the present invention involves the concept described above and exhibits both low friction property attributable to the graphite structure and high hardness property attributable to the diamond structure and the Si-C bond. In addition, the film according to the present invention exhibits stable low frictional property attributable to

the stable bond structure due to the addition of trace oxygen." (Page 7, lines 28-33).

These descriptions do more than infer that in the amorphous hard film of the invention, the atomic % of the silicon bonded with carbon is greater than that of the silicon bonded with oxygen. They convey an understanding that this is what has been invented.

Removal of the 35 U.S.C. § 112 rejection and an allowance of the claims is in order.

The foregoing is believed to be a complete and proper response to the Office Action dated May 19, 2003, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicant hereby petitions for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

PATENT APPLN. NO. 09/850,192
RESPONSE UNDER 37 C.F.R. § 1.116

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In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

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